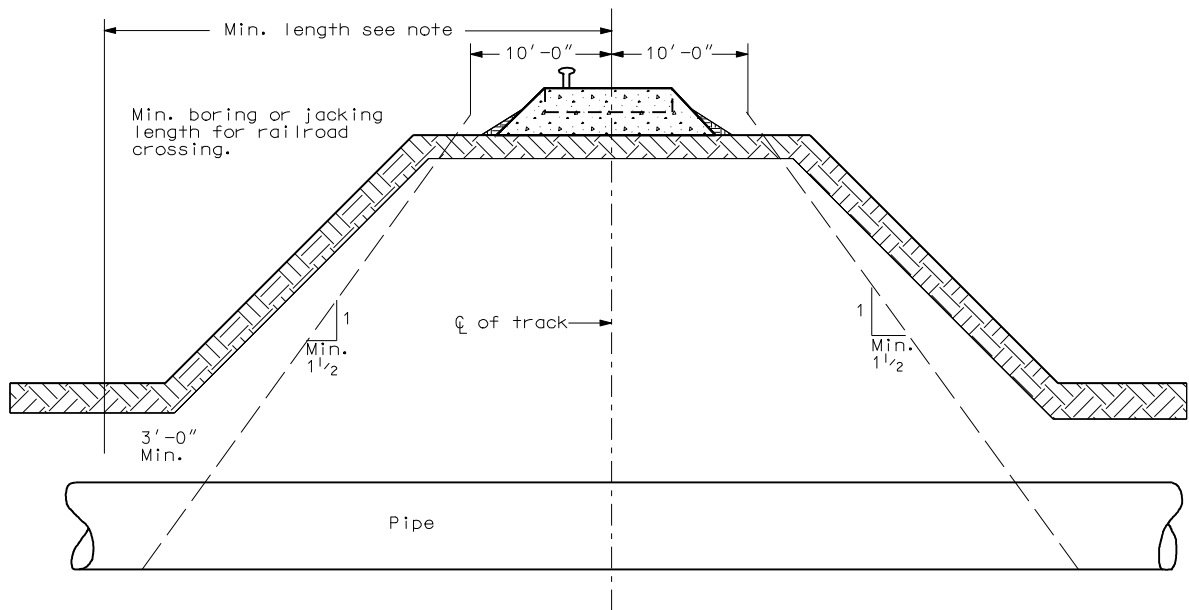
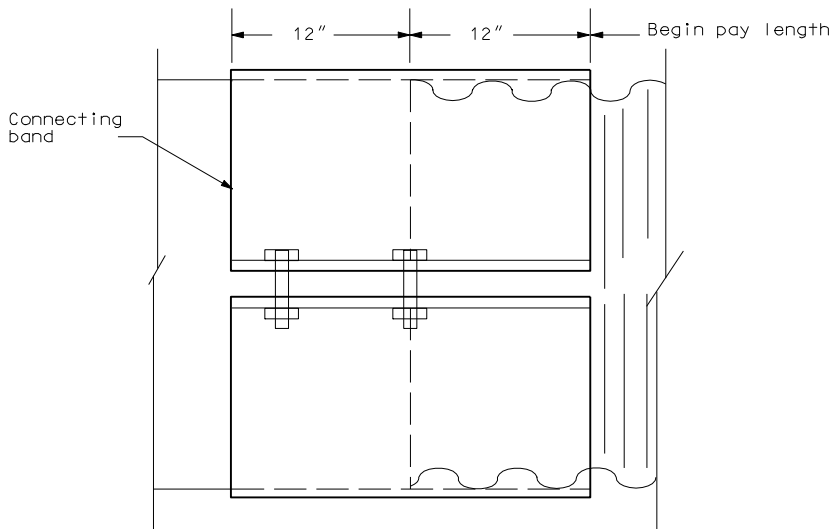


JACKED AND BORED PIPE

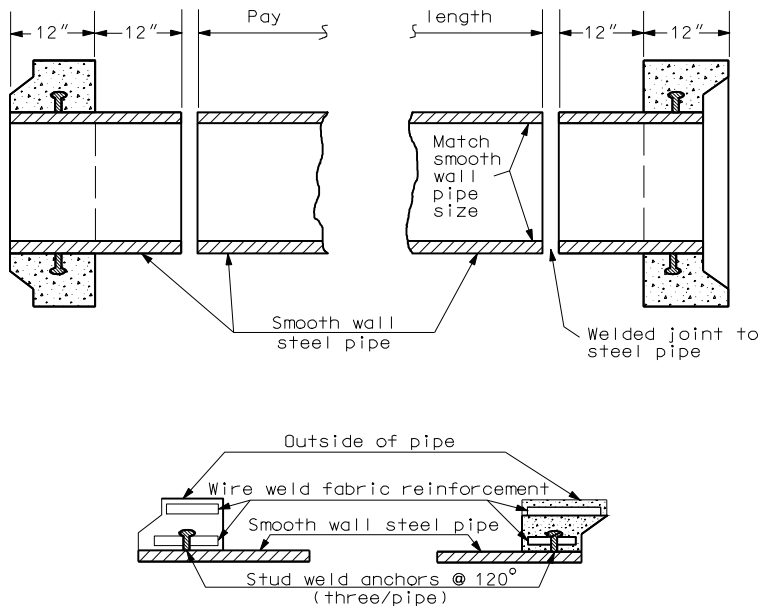
D-714-16



- NOTES:
- Pipe under railroad tracks and across railroad right-of-way shall extend to the greater of the following distances, measured at right angles to center line of track.
 - 2 ft. beyond toe of slope
 - 3 ft. beyond ditch
 - A minimum distance of 25 ft. from center line of outside track when end of casing is below ground.
 - Depth Of Installation: Pipe under railway tracks and across railway right-of-way shall be not less than 5 1/2 ft. from base of railway to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4 1/2 ft.
 - Pipe culverts shall be installed using equipment that encases the hole as the earth is removed. Boring or jacking without the concurrent installation of the pipe will not be permitted. Pipe shall extend through the undisturbed fill and shall be installed so as not to disrupt traffic nor damage roadway grade and surface. Use of water in the process of boring or jacking is prohibited. The boring or jacking shall be made in straight lines and to the grade and alignment shown on the plans. The flow line elevation at the starting point for boring or jacking shall be within 0.1 ft. of staked grade; the flow line shall not be reversed at any point; and the line and grade at any point within the pipe shall not vary by more than 0.5 ft. from the line and grade designated.
 - Jacked Pipe: The method used to install the pipe indicated as jacked on the plans shall be left to the discretion of the contractor. The boring or jacked methods are acceptable. If the boring method is used, the contractor may use smooth wall steel pipe in lieu of RCP. Regardless of the method or type of pipe used, the price bid for jacked pipe shall be considered full compensation for the pipe and its installation.
 - Pipe culverts that are bored or jacked shall conform to section 714 of the standard specifications.
 - Reinforced concrete pipe, class V, shall be used at all railroad crossings unless otherwise indicated on the plans.
 - The price of connecting bands will be included in the price bid for "conduit pipe-jacked or bored."



STANDARD DETAIL FOR JOINTING SMOOTH WALL STEEL PIPE TO CORRUGATED PIPE



STANDARD DETAIL FOR JOINTING SMOOTH WALL STEEL PIPE TO REINFORCED CONCRETE PIPE

TABLE OF MINIMUM WALL THICKNESS FOR S.W.S.P. UNDER R.R.	
Nominal Thickness (Inches)	Nominal Diameter (Inches)
0.188	Under 14
0.219	14 and 16
0.250	18
0.281	20
0.312	22
0.344	24
0.375	26
0.406	28 and 30
0.438	32
0.469	34 and 36
0.500	38, 40 and 42

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
04-03-89	
REVISIONS	
DATE	CHANGE
09-03-96	Weld anchor spacing
06-25-03	Layout revisions
12-01-04	PE Stamp added

This document was originally issued and sealed by MARK S GAYDOS, Registration Number PE-4518, on 12/01/04 and the original document is stored at the North Dakota Department of Transportation